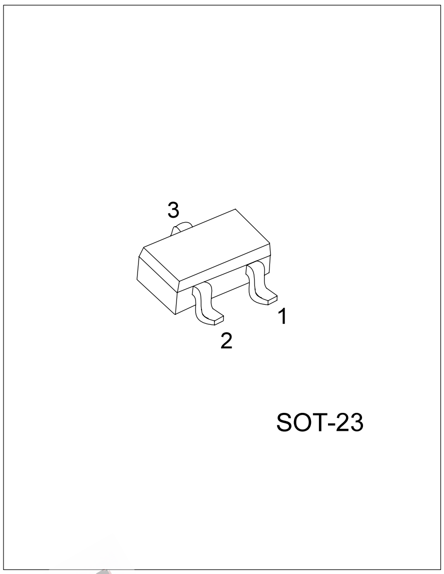
RF TRANSISTOR

DESCRIPTION

The UTC **MMBTH10** is designed for using as VHF and UHF oscillators and VHF Mixer in a tuner of a TV receiver.



*Pb-free plating product number: MMBTH10L

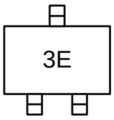
ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
MMBTH10-x-AE3-C-R	MMBTH10L-x-AE3-C-R	SOT-23	E	B	C	Tape Reel

MMBTH10L-x-AE3-C-R

(1)Packing Type	(1) T: Tube
(2)Pin Assignment	(2) refer to Pin Assignment
(3)Package Type	(3) AE3: SOT-23
(4)Rank	(4) x: refer to Classification of h_{FE}
(5)Lead Plating	(5) L: Lead Free Plating, Blank: Pb/Sn

MARKING



■ ABSOLUTE MAXIMUM RATING (Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-base voltage	V_{CBO}	30	V
Collector-emitter voltage	V_{CEO}	25	V
Emitter-base voltage	V_{EBO}	3	V
Total Power Dissipation	P_C	225	mW
Collector current	I_C	50	mA
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55 ~ +150	℃

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

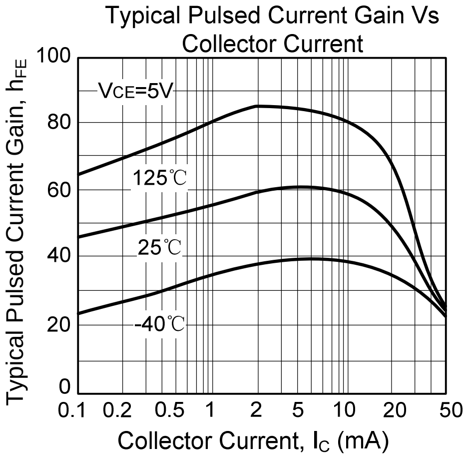
■ ELECTRICAL CHARACTERISTICS (Ta=25℃, unless otherwise specified)

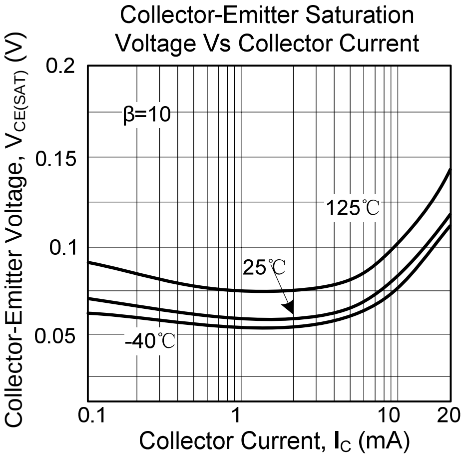
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=100μA	30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA	25			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA	3			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=4mA, I_B=400μA			500	mV
Base-Emitter on Voltage	$V_{BE(ON)}$	V_{CE}=10V, I_C=4mA			950	mV
Collector Cut-off Current	I_{CBO}	V_{CB}=25V			100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=2V			100	nA
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=4mA	60			
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHZ			0.7	pF
Current Gain Bandwidth Product	f_T	V_{CE}=10V, I_C=4mA, f=100MHz	650			MHz

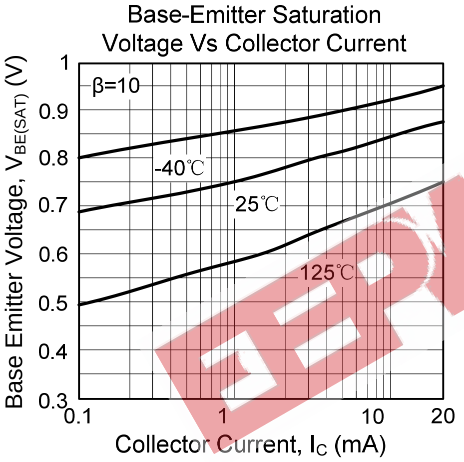
■ CLASSIFICATION OF h_{FE}

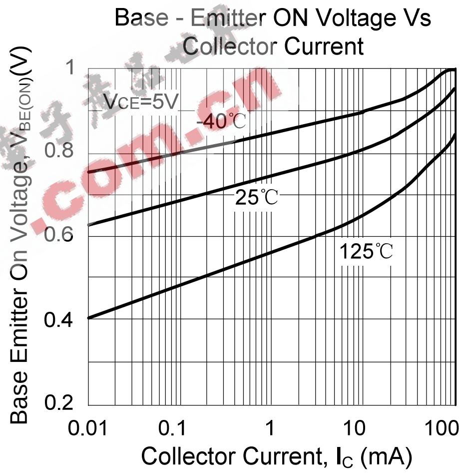
RANK	A	B	C
RANGE	60-100	90-130	120-200

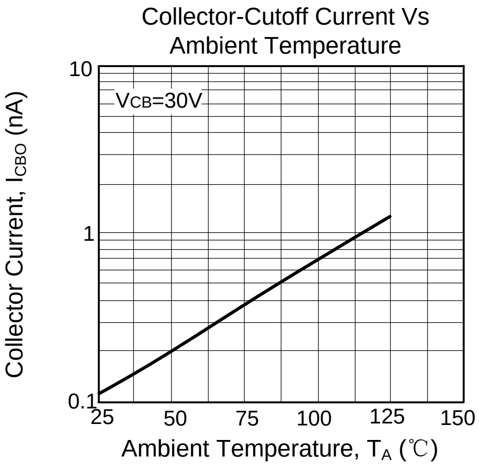
■ TYPICAL CHARACTERISTICS

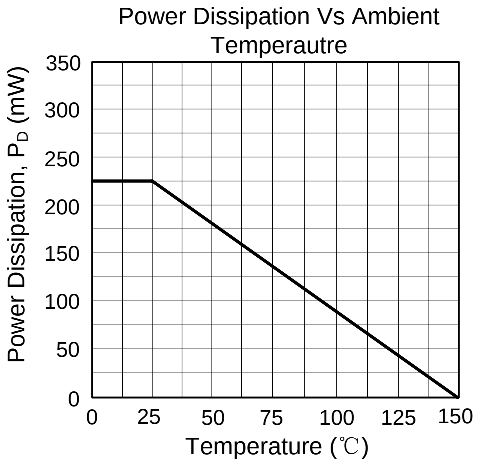

Typical Pulsed Current Gain Vs Collector Current


Collector-Emitter Saturation Voltage Vs Collector Current


Base-Emitter Saturation Voltage Vs Collector Current

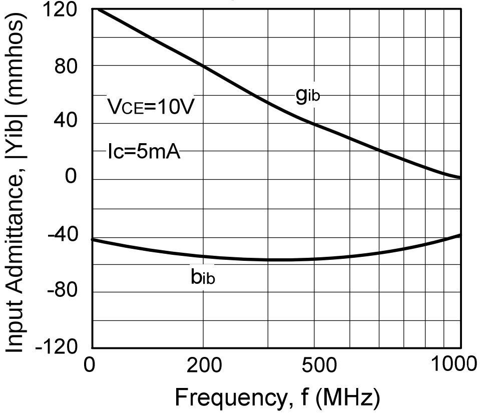

Base - Emitter ON Voltage Vs Collector Current


Collector-Cutoff Current Vs Ambient Temperature

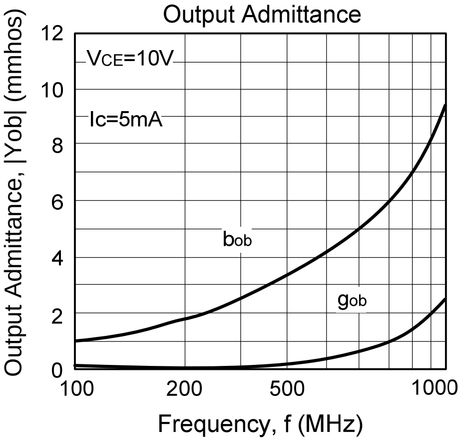

Power Dissipation Vs Ambient Temperautre

■ TYPICAL CHARACTERISTICS(Cont.)

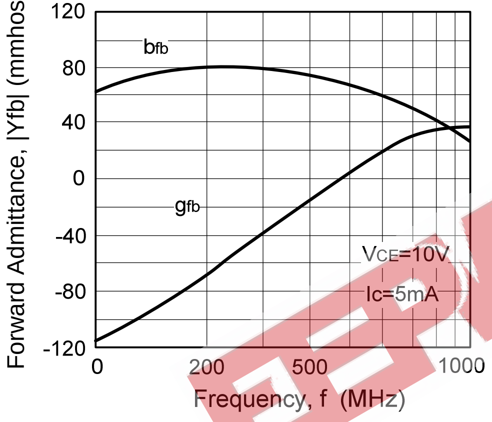
Input Admittance



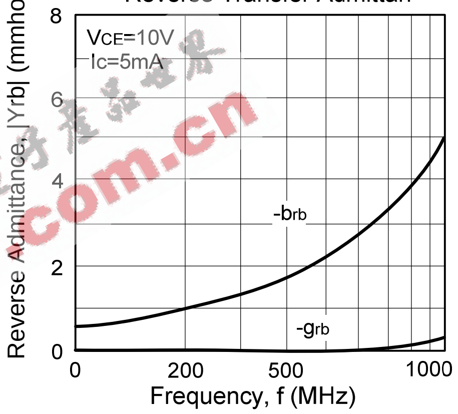
Output Admittance



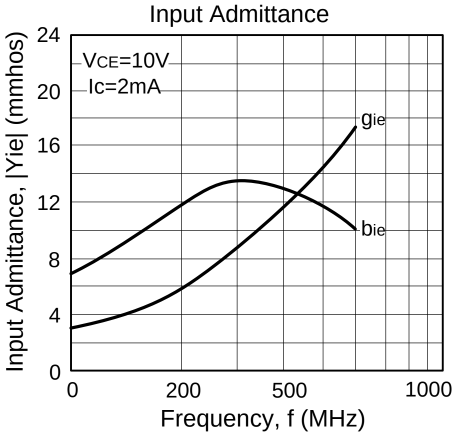
Forward Transfer Admittance



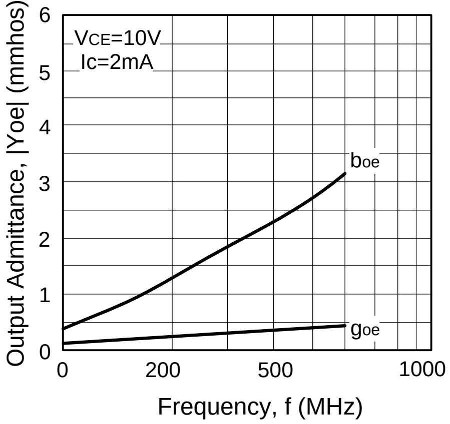
Reverse Transfer Admittan



Input Admittance



Output Admittance



■ TYPICAL CHARACTERISTICS(Cont.)